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S51	64	((smart or java) with card\$1) and (jvm or (java with virtual)) and interface near5 (id\$1 or identifi\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/03 11:57
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S70	508	((java\$1bean or bean or ejb)) same (numeric or number or digit\$1 or bit\$1) same (id\$1 or identi\$6 or aid or key\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/03 14:13
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1 [An overview of the international symposium on wearable computers 1998](#)

Mark Billingham, Thad Starner

January 2000 **ACM SIGCHI Bulletin**, Volume 32 Issue 1Full text available: [pdf\(546.75 KB\)](#) Additional Information: [full citation](#), [index terms](#)

2 [A formal framework for the Java bytecode language and verifier](#)

Stephen N. Freund, John C. Mitchell

October 1999 **ACM SIGPLAN Notices , Proceedings of the 14th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**, Volume 34 Issue 10Full text available: [pdf\(1.93 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents a sound type system for a large subset of the Java bytecode language including classes, interfaces, constructors, methods, exceptions, and bytecode subroutines. This work serves as the foundation for developing a formal specification of the bytecode language and the Java Virtual Machine's bytecode verifier. We also describe a prototype implementation of a type checker for our system and discuss some of the other applications of this work. For example, we show how to exte ...

3 [Java bytecode compression for low-end embedded systems](#)

Lars Ræder Clausen, Ulrik Pagh Schultz, Charles Consel, Gilles Muller

May 2000 **ACM Transactions on Programming Languages and Systems (TOPLAS)**, Volume 22 Issue 3Full text available: [pdf\(241.04 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

A program executing on a low-end embedded system, such as a smart-card, faces scarce memory resources and fixed execution time constraints. We demonstrate that factorization of common instruction sequences in Java bytecode allows the memory footprint to be reduced, on average, to 85% of its original size, with a minimal execution time penalty. While preserving Java compatibility, our solution requires only a few modifications which are straightforward to implement in any JVM used in a low-e ...

Keywords: Java bytecode, code compression, embedded systems



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Relevance scale ☐ ☐ ☐ ☐ ☐**1** [Formalizing the safety of Java, the Java virtual machine, and Java card](#)

Pieter H. Hartel, Luc Moreau

December 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 4

Full text available: pdf(442.86 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We review the existing literature on Java safety, emphasizing formal approaches, and the impact of Java safety on small footprint devices such as smartcards. The conclusion is that although a lot of good work has been done, a more concerted effort is needed to build a coherent set of machine-readable formal models of the whole of Java and its implementation. This is a formidable task but we believe it is essential to build trust in Java safety, and thence to achieve ITSEC level 6 or Common Crite ...

Keywords: Common criteria, programming**2** [Proceedings - only: New channels, old concerns: scalable and reliable data dissemination](#)

Colin Allison, Duncan McPherson, Dirk Husemann

September 2000 **Proceedings of the 9th workshop on ACM SIGOPS European workshop: beyond the PC: new challenges for the operating system**

Full text available: pdf(76.39 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

An interesting trend in the continuing convergence of information technologies is the emergence of the Internet as a content provider in its own right, as opposed to its simply being one of many delivery channels. For example, it is increasingly the primary source for items such as court rulings and software releases. Unfortunately the IP protocols normally employed for reliable data transfer are of the point-to-point type and not well suited to large-scale one-to-many dissemination. Sudden rush ...

3 [Formal methods II: A model-based approach to integrating security policies for embedded devices](#)

Michael McDougall, Rajeev Alur, Carl A. Gunter

September 2004 **Proceedings of the fourth ACM international conference on Embedded software**

Full text available: pdf(180.81 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Embedded devices like smartcards can now run multiple interacting applications. A particular


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1 [Smart Cards and Biometrics: The cool way to make secure transactions](#)

David Corcoran, David Sims, Bob Hillhouse

 March 1999 **Linux Journal**

 Full text available: [html\(22.95 KB\)](#) Additional Information: [full citation](#), [index terms](#)

2 [Logical and physical design issues for smart card databases](#)

Cristiana Bolchini, Fabio Salice, Fabio A. Schreiber, Letizia Tanca

 July 2003 **ACM Transactions on Information Systems (TOIS)**, Volume 21 Issue 3

 Full text available: [pdf\(1.12 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The design of very small databases for smart cards and for portable embedded systems is deeply constrained by the peculiar features of the physical medium. We propose a joint approach to the logical and physical database design phases and evaluate several data structures with respect to the performance, power consumption, and endurance parameters of read/program operations on the Flash-EEPROM storage medium.

Keywords: Design methodology, access methods, data structures, flash memory, personal information systems, smart card

3 [Advanced control flow in Java card programming](#)

Peng Li, Steve Zdancewic

 June 2004 **ACM SIGPLAN Notices , Proceedings of the 2004 ACM SIGPLAN/SIGBED conference on Languages, compilers, and tools**, Volume 39 Issue 7

 Full text available: [pdf\(205.46 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Java Card technology simplifies the development of smart card applications by providing a high-level programming language similar to Java. However, the master-slave programming model used in current Java Card platform creates control flow difficulties when writing complex card programs, making it inconvenient, tedious, and error-prone to implement Java Card applications. This paper examines these drawbacks of the master-slave model and proposes a concurrent thread model for developing future Jav ...

Keywords: CPS, Java card, continuation, control flow, smart card, trampolined style